UNDERSTANDING DEEP ATLANTIC ECOSYSTEMS

Influence of the Mediterranean Outflow Water (MOW) on the occurrence, distribution patterns and connectivity of deep benthic communities

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WP3 Biodiversity and Biogeography

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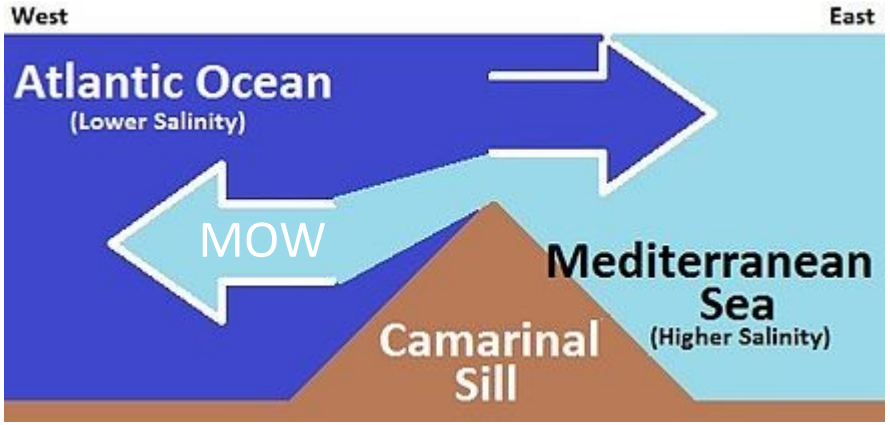
BACKGROUND

Need of understanding current and past connections existing between the deep-benthic communities of the Atlantic and the Mediterranean Sea



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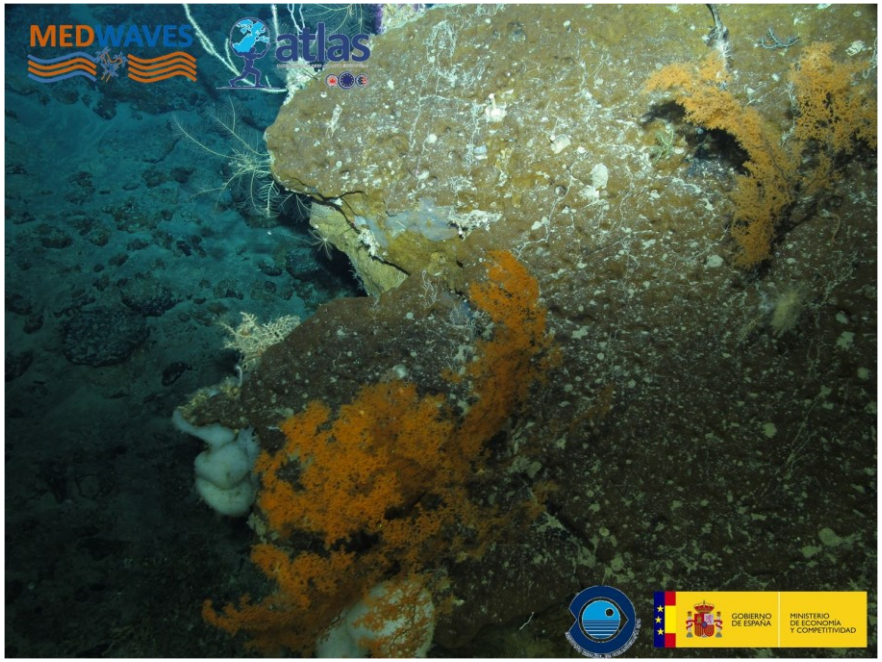
Huge gap of knowledge

- Degree of connectivity
- Dynamics
- Possible relationships

⇨ Study of similarities and differences regarding species and habitat occurrence, composition and diversity on both sides

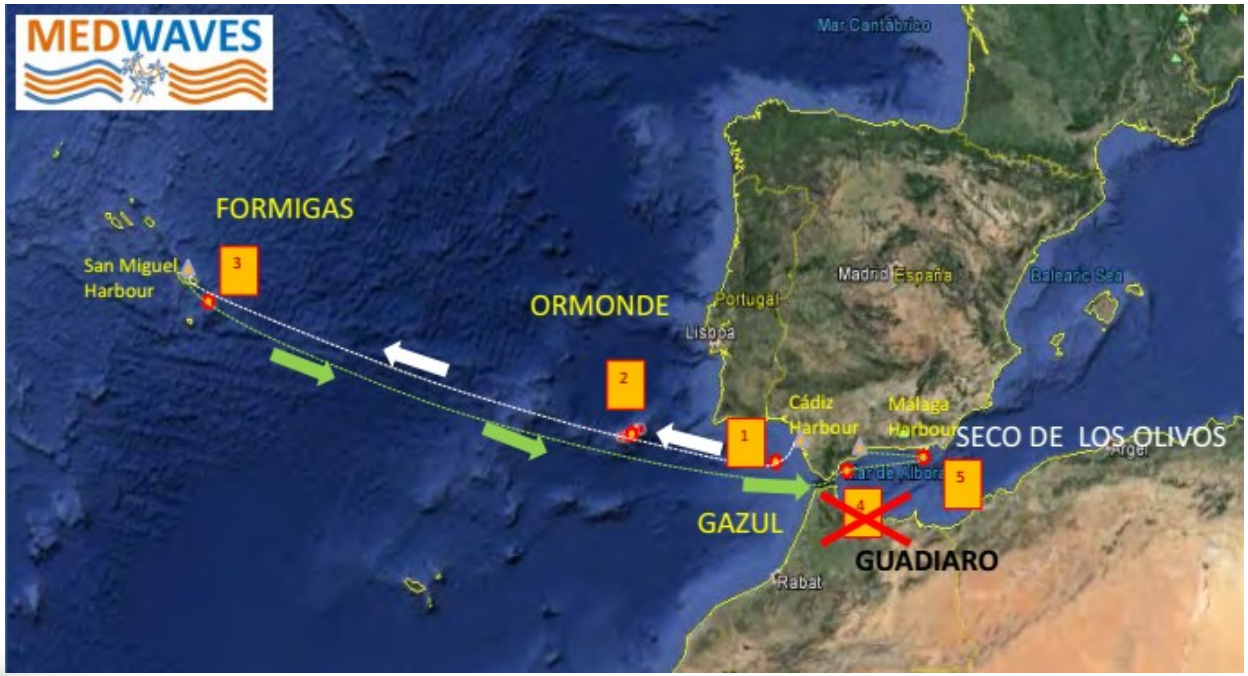
MAIN GOAL

Characterization and comparison of the deep benthic communities located in the depth range influenced by the MOW and those not influenced by it (Atlantic-Mediterranean comparison)



STUDY AREAS - MEDWAVES

Work mostly based in the video and oceanographic data gathered during MEDWAVES



SPECIFIC OBJECTIVES

1. Characterization of the deep benthic communities

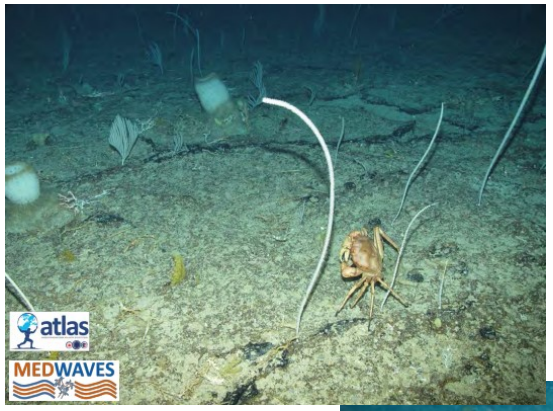
Quantitative analysis of HD video obtained by ROV surveys

- Diversity
- Density
- Size
- Distribution patterns

SPECIFIC OBJECTIVES

2. Comparative analysis of the benthic communities among the study areas

- Community composition
- Density and distribution pattern of the dominant species
- Size → population structure (demography)



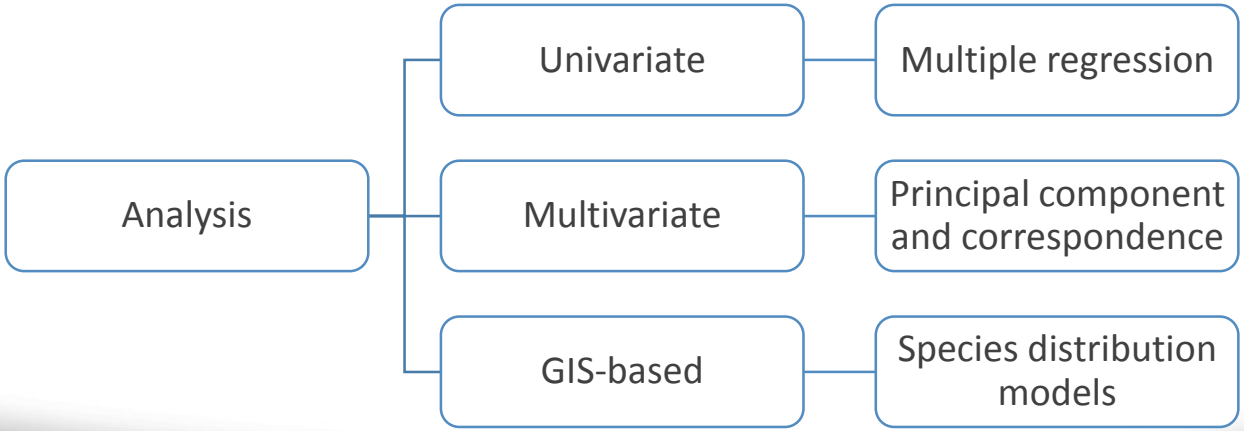
→ Formigas

Gazul ←

SPECIFIC OBJECTIVES

3. Exploration of the relationship between the main environmental features and the benthic community composition in the study areas

Environmental features:
- Physicochemical characteristics of seawater
- Geomorphological characteristics of seafloor



SPECIFIC OBJECTIVES

4. Generation of innovative next-generation indexes and criteria for the reliable assessment of the ecological state and degree of vulnerability of deep benthic ecosystems

- Generate new procedures for the study of marine vulnerable ecosystems (VMEs) (i.e. Deep sponge grounds and CWC communities)

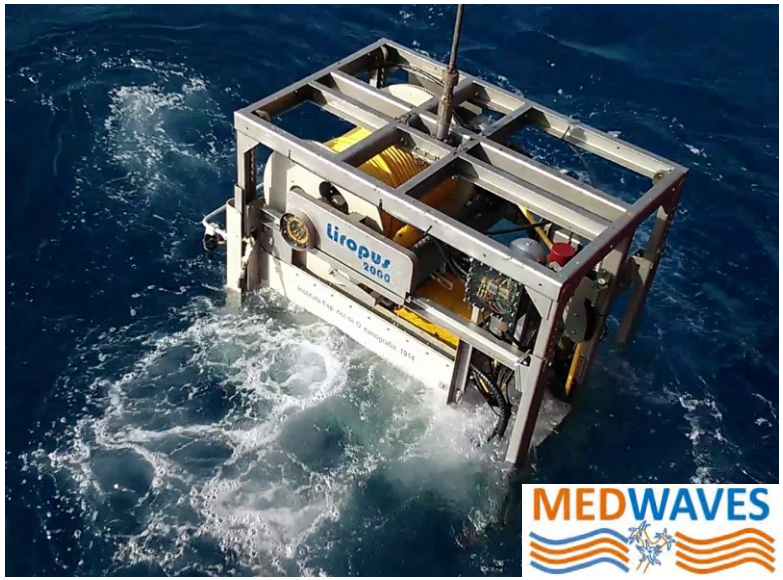
ROV Liropus (IEO)

APPLICABILITY

- Evaluate of the conservation status of the studied deep benthic communities
- New knowledge to contribute to address the Good Environmental Status (GES) in the deep sea

- Contribute to the Marine Spatial Planning (MSP)

- Define potential conservation areas based on their species composition, vulnerability and ecological role



Thank you for your attention